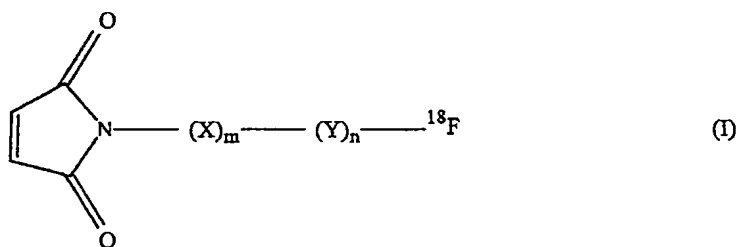


AUTHORIZED EXAMINER'S AMENDMENT TO THE CLAIMS

Please cancel claims 87-99 as follows:

Claims 1-46 (Cancelled).

Claim 47 (Previously Presented) A compound according to formula (I):



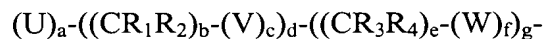
wherein

m represents an integer from 0 to 10;

n represents an integer from 1 to 10;

Y represents a monocyclic or bicyclic heterocyclic group selected from the group consisting of imidazolyl, pyrazolyl, benzimidazolyl, pyridinyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, quinolinyl, isoquinolinyl, cinnolinyl, quinazolinyl, quinoxalinyl and purinyl, wherein Y may optionally be substituted with one or more substituents selected from the group consisting of hydrogen, halogen, phenyl, C₁-C₆ alkyl, C₁-C₆ alkoxy, aryloxy, amino, mono- or di(C₁-C₆ alkyl)amino, mono- or di(aryl)amino, thio, C₁-C₆ alkylthio, arylthio, formyl, C₁-C₆ alkyl-carbonyl, arylcarbonyl, carbonyl, C₁-C₆ alkoxy-carbonyl, aryloxy-carbonyl, C₁-C₆ alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl; and

X represents a radical of the following formula:



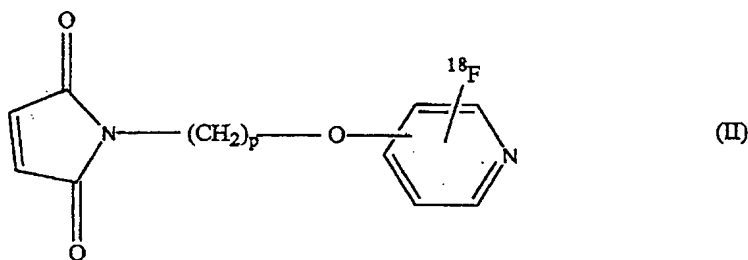
wherein

a, b, c, d, e, f and g each independently represent an integer from 0 to 10; and

U, V and W each independently represent -NR₁-, -O-, -S-, -N(-O)-, ethynyl, -CR₁=CR₂-, -(C=O)-, -(C=S)-, -C(=NR₁)-, -C(=O)O-, -(C=S)S-, -C(=NR₁)NR₂-, -CR₁R₂-, -CR₁OR₂- or -CR₁NR₂R₃-, wherein R₁, R₂, R₃ and R₄ are each independently selected from the group consisting of hydrogen, halogen, phenyl, C₁-C₆ alkyl, C₁-C₆ alkoxy, aryloxy, amino, mono- or di(C₁-C₆ alkyl)amino, mono- or di(aryl)amino, thio, C₁-C₆ alkylthio, arylthio, formyl, C₁-C₆ alkyl-carbonyl, arylcarbonyl, carbonyl, C₁-C₆ alkoxy-carbonyl, aryloxy-carbonyl, C₁-C₆ alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl.

Claim 48 (Previously Presented) The compound according to claim 47, wherein n is 1 and Y is a 3-pyridinyl group.

Claim 49 (Previously Presented) The compound according to claim 48, wherein the compound is represented by formula (II):



wherein p represents an integer from 1 to 10.

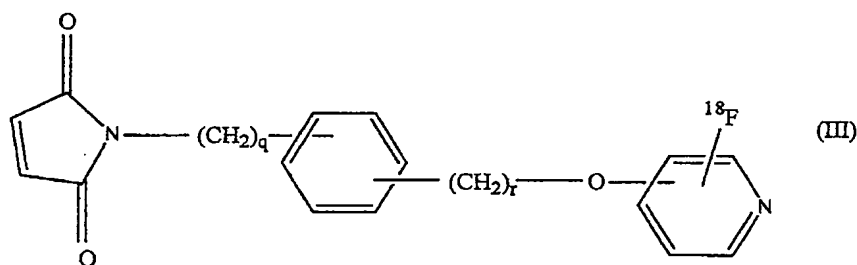
Claim 50 (Previously Presented) The compound according to claim 49, wherein the compound is selected from the group consisting of:

1-[2-(2-[^{18}F]fluoropyridin-3-yloxy)ethyl]-pyrrole-2,5-dione;

1-[4-(2-[^{18}F]fluoropyridin-3-yloxy)butyl]-pyrrole-2,5-dione;

1-[5-(2-[¹⁸F]fluoropyridin-3-yloxy)pentyl]-pyrrole-2,5-dione;
1-[6-(2-[¹⁸F]fluoropyridin-3-yloxy)hexyl]-pyrrole-2,5-dione;
1-[(2-[¹⁸F]fluoropyridin-3-yloxy)methyl]-pyrrole-2,5-dione; and
1-[3-(2-[¹⁸F]fluoropyridin-3-yloxy)propyl]-pyrrole-2,5-dione.

Claim 51 (Previously Presented) The compound according to claim 48, wherein the compound is represented by formula (III):

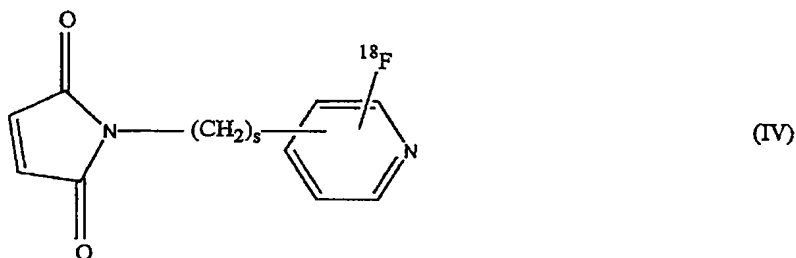


wherein q and r each independently represent an integer from 0 to 10.

Claim 52 (Previously Presented) The compound according to claim 51, wherein the compound is selected from the group consisting of:

1-{4-[2-(2-[¹⁸F]fluoropyridin-3-yloxy)-ethyl]phenyl}pyrrole-2,5-dione;
1-[4-(2-[¹⁸F]fluoropyridin-3-yloxymethyl)-phenyl]pyrrole-2,5-dione; and
1-[4-(2-[¹⁸F]fluoropyridin-3-yloxymethyl)-benzyl]pyrrole-2,5-dione.

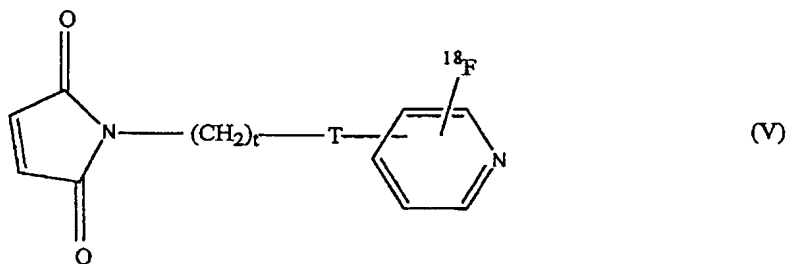
Claim 53 (Previously Presented) The compound according to claim 48, wherein the compound is represented by formula (IV):



wherein s represents an integer from 1 to 10.

Claim 54 (Previously Presented) The compound according to claim 53, wherein the compound is 1-[3-(6-[^{18}F]fluoropyridin-3-yl)propyl]-pyrrole-2,5-dione.

Claim 55 (Previously Presented) The compound according to claim 48, wherein the compound is represented by formula (V):



wherein t represents an integer from 0 to 10; and T is a $-\text{CH}=\text{CH}-$ group or a $-\text{C}\equiv\text{C}-$ group.

Claim 56 (Previously Presented) The compound according to claim 55, wherein the compound is selected from the group consisting of:

- 1-[3-(6-[^{18}F]fluoropyridin-3-yl)allyl]-pyrrole-2,5-dione; and
- 1-[3-(6-[^{18}F]fluoropyridin-3-yl)prop-2-ynyl]pyrrole-2,5-dione.

Claim 57 (Previously Presented) A kit comprising a macromolecule and the compound according to claim 47.

Claim 58 (Previously Presented) The kit according to claim 57, wherein the kit is a detection and analysis kit for medical imaging.

Claim 59 (Previously Presented) The kit according to claim 57, wherein the kit is a diagnosis kit.

Claim 60 (Previously Presented) The kit according to claim 57, wherein the macromolecule is a biological macromolecule.

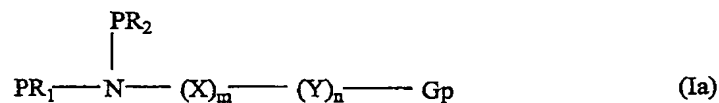
Claim 61 (Previously Presented) The kit according to claim 57, wherein the macromolecule is a biological macromolecule selected from the group consisting of an oligonucleotide, a protein, an antibody and a peptide.

Claim 62 (Previously Presented) The kit according to claim 57, wherein the macromolecule is a macromolecule for recognition of a specific site that exhibits target molecules associated with a particular disease.

Claim 63 (Previously Presented) The kit according to claim 57, wherein the macromolecule is a macromolecule for recognition of a specific site that is selected from the group consisting of apoptosis sites, necrosis sites or tumor sites.

Claim 64 (Previously Presented) A process for preparing the compound according to claim 47, wherein the process comprises:

contacting a precursor compound according to formula (Ia):



wherein

PR₁ and PR₂ each independently represent: a hydrogen or a protective group, with the proviso that PR₁ and PR₂ are not both a hydrogen; or PR₁ and PR₂, together with the nitrogen atom, form a cyclic protective group;

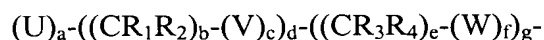
Gp represents a leaving group capable of being replaced by a fluorine-18 atom;

m represents an integer from 0 to 10;

n represents an integer from 1 to 10;

Y represents a monocyclic or bicyclic heterocyclic group selected from the group consisting of imidazolyl, pyrazolyl, benzimidazolyl, pyridinyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, quinolinyl, isoquinolinyl, cinnolinyl, quinazolinyl, quinoxalinyl and purinyl, wherein Y may optionally be substituted with one or more substituents selected from the group consisting of hydrogen, halogen, phenyl, C₁-C₆ alkyl, C₁-C₆ alkoxy, aryloxy, amino, mono- or di(C₁-C₆ alkyl)amino, mono- or di(aryl)amino, thio, C₁-C₆ alkylthio, arylthio, formyl, C₁-C₆ alkyl-carbonyl, arylcarbonyl, carbonyl, C₁-C₆ alkoxy-carbonyl, aryloxy-carbonyl, C₁-C₆ alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl; and

X represents a radical of the following formula:

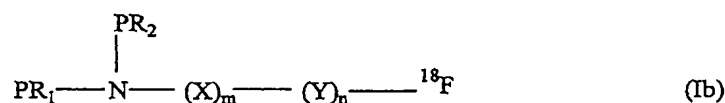


wherein

a, b, c, d, e, f and g each independently represent an integer from 0 to 10; and

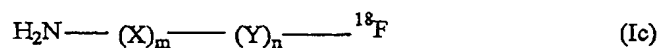
U, V and W each independently represent -NR₁-, -O-, -S-, -N(-O)-, ethynyl, -CR₁=CR₂-, -(C=O)-, -(C=S)-, -C(=NR₁)-, -C(=O)O-, -(C=S)S-, -C(=NR₁)NR₂-, -CR₁R₂-, -CR₁OR₂- or -CR₁NR₂R₃-, wherein R₁, R₂, R₃ and R₄ are each independently selected from the group consisting of hydrogen, halogen, phenyl, C₁-C₆ alkyl, C₁-C₆ alkoxy, aryloxy, amino, mono- or di(C₁-C₆ alkyl)amino, mono- or di(aryl)amino, thio, C₁-C₆ alkylthio, arylthio, formyl, C₁-C₆ alkyl-carbonyl, arylcarbonyl, carbonyl, C₁-C₆ alkoxy-carbonyl, aryloxy-carbonyl, C₁-C₆ alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl.

with a source of [¹⁸F]-labeled fluoride anions (F⁻) to provide a compound according to formula (Ib):



;

removing the protective group(s) PR₁ and/or PR₂ from the compound according to formula (Ib) to provide a compound according to formula (Ic):



; and

reacting the compound according to formula (Ic) with a reactant capable of providing a maleimido group from an amino group, to yield the compound according to claim 47.

Claim 65 (Previously Presented) The process according to claim 64, wherein the protective group(s) PR₁ and/or PR₂ is/are selected from the group consisting of tert-butoxycarbonyl (BOC) and fluorenylmethoxycarbonyl (Fmoc).

Claim 66 (Previously Presented) The process according to claim 64, wherein the protective groups PR₁ and PR₂, together with the nitrogen atom, form a phthalamido protective group.

Claim 67 (Previously Presented) The process according to claim 64, wherein Gp is selected from the group consisting of a halogen, a mesyl group, a tosyl group, a triflate group, a nitro group and an ammonium salt.

Claim 68 (Previously Presented) The process according to claim 67, wherein Gp is an ammonium salt and the ammonium salt is trimethylammonium trifluoromethanesulphonate.

Claim 69 (Previously Presented) The process according to claim 64, wherein the source of [¹⁸F]-labeled fluoride anions (F⁻) comprises the fluoride anions (F⁻) and a counterion.

Claim 70 (Previously Presented) The process according to claim 69, wherein the counterion is a cation selected from the group consisting of rubidium, tetrabutylammonium, potassium, sodium and lithium.

Claim 71 (Previously Presented) The process according to claim 69, wherein the counterion is a cation selected from the group consisting of potassium, sodium and lithium, and the cation is stabilized by a cryptand or a crown ether.

Claim 72 (Previously Presented) The process according to claim 64, wherein said removing is carried out by deprotecting the compound according to formula (Ib) with

trifluoroacetic acid (TFA) in a solvent for a period of 1-5 minutes to provide the compound according to formula (Ic).

Claim 73 (Previously Presented) The process according to claim 72, wherein the solvent is dichloromethane.

Claim 74 (Previously Presented) The process according to claim 64, wherein the reactant capable of providing a maleimido group from an amino group is selected from the group consisting of N-methoxycarbonylmaleimide and succinimide.

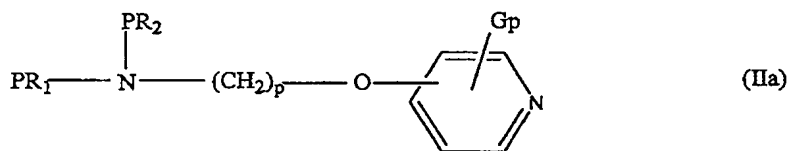
Claim 75 (Previously Presented) The process according to claim 64, wherein said reacting is carried out in a solvent with heating at a temperature of 100-200°C for a period of 1-20 minutes.

Claim 76 (Previously Presented) The process according to claim 75, wherein the solvent is xylene or tetrahydrofuran.

Claim 77 (Previously Presented) The process according to claim 64, wherein said reacting is carried out in a two-phase mixture at ambient temperature for a period of 3-15 minutes.

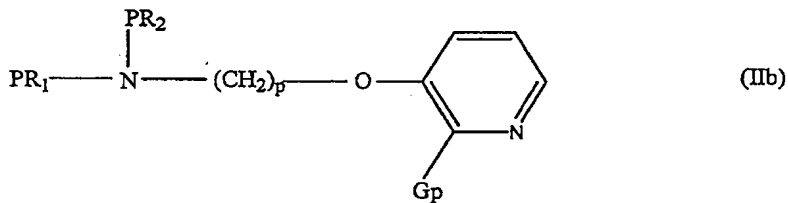
Claim 78 (Previously Presented) The process according to claim 77, wherein the two-phase mixture comprises dioxane and aqueous sodium bicarbonate.

Claim 79 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIa):



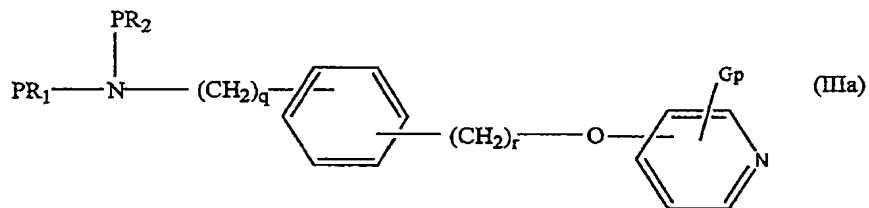
wherein p represents an integer from 1 to 10.

Claim 80 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIb):



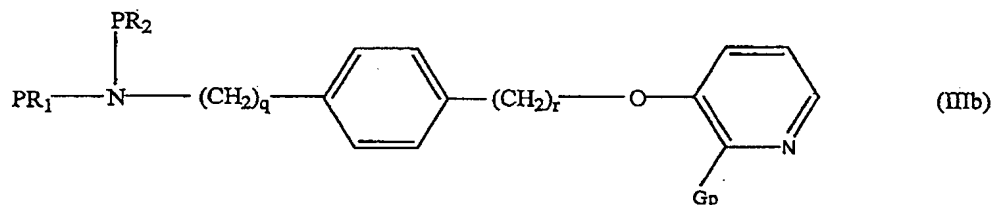
wherein p represents an integer from 1 to 10.

Claim 81 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIIa):



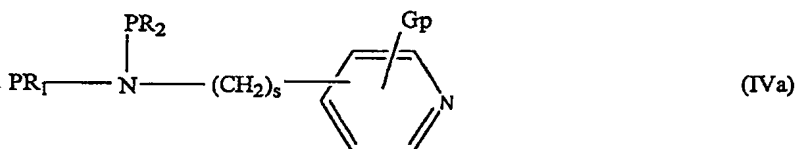
wherein q and r each independently represent an integer from 0 to 10.

Claim 82 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIIb):



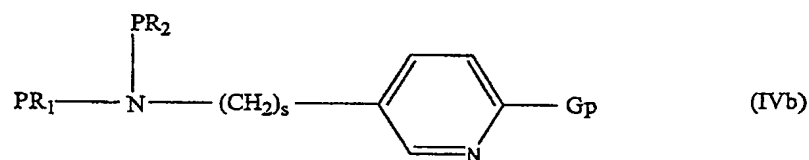
wherein q and r each independently represent an integer from 0 to 10.

Claim 83 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IVa):



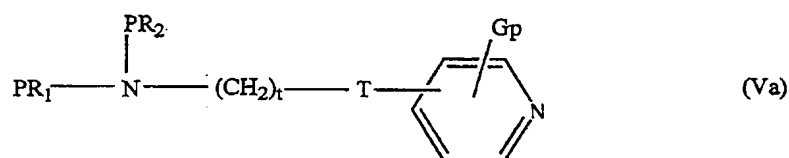
wherein s represents an integer from 1 to 10.

Claim 84 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IVb):



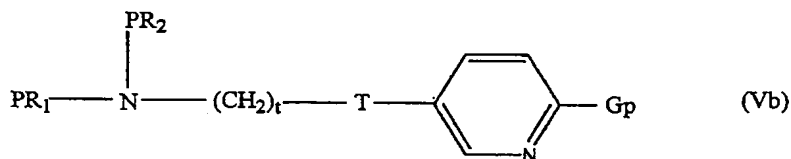
wherein s represents an integer from 1 to 10.

Claim 85 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (Va):



wherein t represents an integer from 0 to 10; and T is a -CH=CH- group or a -C≡C- group.

Claim 86 (Previously Presented) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (Vb):



wherein t represents an integer from 0 to 10; and T is a -CH=CH- group or a -C≡C- group.

Claims 87-99 (Cancelled).

Claim 100 (Previously Presented) A method of labeling a macromolecule comprising coupling the compound according to claim 47 to the macromolecule.

Claim 101 (Previously Presented) The method according to claim 100, wherein the macromolecule is a biological macromolecule.

Claim 102 (Previously Presented) The method according to claim 100, wherein the macromolecule is a biological macromolecule selected from the group consisting of an oligonucleotide, a protein, an antibody and a peptide.

Claim 103 (Previously Presented) The method according to claim 100, wherein the macromolecule is a macromolecule for recognition of a specific site that exhibits target molecules associated with a particular disease.

Claim 104 (Previously Presented) The method according to claim 100, wherein the macromolecule is a macromolecule for recognition of a specific site that is selected from the group consisting of apoptosis sites, necrosis sites or tumor sites.